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CLAIMS

1. An anti-CEA antibody ("806.077 Ab") comprising complementarity determining regions (CDRs) in which the CDRs comprise the following sequences:

5 a) heavy chain

CDR1 DNYMH (SEQ ID NO: 29)

CDR2 WIDPENGDT E YAPKFRG (SEQ ID NO: 31)

CDR3 LIYAGYLAMD Y (SEQ ID NO: 32); and

b) light chain

10 CDR1 SASSSVTYMH (SEQ ID NO: 26)

CDR2 STSNLAS (SEQ ID NO: 27)

CDR3 QQRSTYPLT (SEQ ID NO: 28).

2. An antibody according to claim 1 in which the heavy chain CDRs 1 and 3 are further
15 defined as:

CDR1 FNIKDNYMH (SEQ ID NO: 30); and

CDR3 HVLIYAGYLA MDY (SEQ ID NO: 33).

3. An antibody according to claim 1 comprising the following, optionally humanised,
20 structure:

a heavy chain variable region sequence (SEQ ID NO: 11)

EVQLQQSGAE LVRSGASVKL SCTASGFNIK DNYMHVVKQR 40

PEQGLEWIAW IDPENGDT EY APKFRGKATL TADSSSNTAY 80

LHLSSLTSED TAVYYCHVLI YAGYLAMDYW GQGTSAVAVSS 120

25 and;

a light chain variable region sequence (SEQ ID NO: 9):

DIELTQSPAI MSASPGEKVT ITCSASSSVT YMHWFQKPG 40

TSPKLWIYST SNLASGVPAR FSGSGSGTSY SLTISRMEAE 80

DAATYYCQQR STYPLTFGAG TKLELKRA 108.

30

4. A humanised antibody according to claim 3 comprising at least one of the following sequences:

a heavy chain variable region sequence which is VH1 (SEQ ID NO: 55);

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a light chain variable region sequence which is VK4 (SEQ ID NO: 71);

a human CH1 heavy chain IgG3 constant region;

a human kappa light chain CL region; and

a human IgG3 hinge region;

5 optionally in the form of a F(ab')₂ fragment.

5. A conjugate comprising an antibody according to any preceding claim and an effector moiety.

10 6. A conjugate according to claim 5 in which the effector moiety is selected from any one of the following:

a) an enzyme suitable for use in an ADEPT system;

b) CPG2;

c) [G251T,D253K]HCPB;

15 d) [A248S,G251T,D253K]HCPB;

e) a co-stimulatory molecule;

f) extracellular domain of B7;

g) extracellular domain of human B7.1; and

h) extracellular domain of human B7.2;

20 optionally in the form of a fusion protein.

7. A conjugate according to claim 6 which is a fusion protein selected from any one of the following conjugates, (sequences being listed in N terminus to C terminus direction):

a) a humanised 806.077 F(ab')₂ - {[A248S,G251T,D253K]HCPB}₂ fusion comprising:

25 an antibody Fd' chain of structure VH1(SEQ ID NO: 55)/CH1 constant region from IgG3/hinge region from IgG3;

the Fd' chain being fused via its C terminus to the N terminus of

[A248S,G251T,D253K]HCPB; and

an antibody light chain of formula VK4(SEQ ID NO: 71)/CL region from kappa light chain;

30 b) {[A248S,G251T,D253K]HCPB}₂-humanised 806.077 F(ab')₂ fusion comprising:
[A248S,G251T,D253K]HCPB;

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the HCPB being fused at its C terminus, via a (GGGS)₃ linker, to the N terminus of an antibody Fd' chain of structure VH1(SEQ ID NO: 55)/CH1 constant region from IgG3/hinge region from IgG3; and

an antibody light chain of formula VK4(SEQ ID NO: 71)/CL region from kappa light chain;

5 and

c) a (human B7.1 extracellular domain)₂ - humanised 806.077 F(ab')₂ fusion comprising:

human B7.1 extracellular domain;

the B7.1 being fused at its C terminus to the N terminus of an antibody Fd' chain of structure

10 VH1(SEQ ID NO: 55)/CH1 constant region from IgG3/hinge region from IgG3; and

an antibody light chain of structure VK4(SEQ ID NO: 71)/CL region from kappa light chain.

8. A polynucleotide sequence capable of encoding a polypeptide of an antibody or a conjugate as defined in any preceding claim.

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9. A vector comprising a polynucleotide as defined in claim 8.

10. A host cell transformed with a polynucleotide sequence as defined in claim 8 or a transgenic non-human animal or transgenic plant developed from the host cell.

20

11. Hybridoma 806.077 deposited as ECACC deposit no. 96022936.

12. A pharmaceutical composition comprising a conjugate as defined in any preceding claim in association with a pharmaceutically-acceptable diluent or carrier, optionally in a form

25 suitable for intravenous administration.

13. A conjugate as described in any preceding claim for use as a medicament.

14. A method of making an antibody or a conjugate as defined in any preceding claim

30 which comprises:

a) subjecting a host cell, a transgenic non-human mammal or a transgenic plant as defined in claim 10, or the hybridoma of claim 11, to conditions conducive to expression, and

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optionally secretion, of the antibody or conjugate; and optionally

b) at least partially purifying the antibody or conjugate.

15. A method of treatment of a human or animal in need of such treatment which
5 comprises administration to a human or animal of a pharmaceutically effective amount of a
conjugate as defined in any preceding claim.

Parameter	Value	Unit
Initial concentration of Fe^{2+} ions	0.01	M
Initial concentration of Fe^{3+} ions	0.01	M
Initial concentration of H_2O_2	0.01	M
Initial concentration of H^+	0.1	M
Temperature	25	$^\circ\text{C}$
Time	0 to 100	min
Concentration of Fe^{2+} ions	0.01	M
Concentration of Fe^{3+} ions	0.01	M
Concentration of H_2O_2	0.01	M
Concentration of H^+	0.1	M
Rate constant k_1	0.01	min^{-1}
Rate constant k_2	0.01	min^{-1}
Rate constant k_3	0.01	min^{-1}
Rate constant k_4	0.01	min^{-1}
Rate constant k_5	0.01	min^{-1}
Rate constant k_6	0.01	min^{-1}
Rate constant k_7	0.01	min^{-1}
Rate constant k_8	0.01	min^{-1}
Rate constant k_9	0.01	min^{-1}
Rate constant k_{10}	0.01	min^{-1}
Rate constant k_{11}	0.01	min^{-1}
Rate constant k_{12}	0.01	min^{-1}
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Rate constant k_{73}	0.01	min^{-1}
Rate constant k_{74}	0.01	min^{-1}